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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/846,297	05/02/2001	Kiyoishi Kumata	0717-0465P	3865

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EXAMINER

NGUYEN, CHANH DUY

ART UNIT	PAPER NUMBER
2675	5

DATE MAILED: 01/16/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/846,297	KUMATA ET AL <i>(D)</i>
	Examiner Chanh Nguyen	Art Unit 2675

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 02 May 2001.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-9 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-9 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. Figure 10 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 2675

5. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art (Figure 10) in view of Juday et al (U.S. Patent 5,067,019; hereinafter briefly referred to as Juday).

As to claim 1, Applicant's admitted prior art (Figure 10) discloses an omniazimuthal visual system including an optical system (1001) capable of obtaining an image of wide view angle. It is noted that the optical system recited in the claim is well-known in the art to receive an image of 360⁰ view field area (panoramic 360⁰ image) being central projection transformation for the image (i.e. polar coordinate transformed to rectangular coordinate); see page 3, lines 1-9, even optical system disclosed in the invention is described in the Japanese Laid-Open Publication No. 6-295333 as admitted by applicant on page 18, lines 13-15 of the specification.

Applicant admitted prior art teaches an image section (1002) for converting the image obtained through the optical system into the image data. Applicant's admitted prior art teaches that a computer (1007) including an image converter (or transformation section), a display (or display section) and a display controller (or display control section) as recited in the claim; see page 2, lines 15-17 and lines 21-25. The only thing different from the prior art admitted by applicant and the claimed invention is that the image transformation section (1007) of the prior art uses software to perform the transforming the image data into display data whereas the claimed invention uses hardware such as a buffer memory, an arithmetic/logic circuit, a lookup table and a CPU to perform the transforming the image data. Juday teaches at least one buffer memory (50, 74, 24, 46) for temporarily storing the image data and the display data, an

arithmetic/logic circuit (multiplier 30, 68, adder 42, 72) for performing coordinate transformed into display data , a lookup table of trigonometric function (34, 36) for use in the arithmetic/logic circuit (30, 68, 42, 72), CPU (computer 104) for controlling at least one buffer memory, the arithmetic/logic circuit and the table. It would have been obvious tone of ordinary skill in the art at the time the invention was made to have substituted the hardware image transformation as taught by Juday to the software image transformation section of prior art admitted by applicant so as to provide a real time remapped image according to any one of a number of different remapping transformations; see column 3, lines 20-46 of Juday.

As to claims 2-3, Juday clearly teaches the transform image data including zoom function (magnification) or pan function for generating a perspective image; see column 14, line 40 through column 15, line 51.

As to claim 4, Juday clearly teaches the arithmetic/logic circuit is being formed only by linear operation circuit (adding or mutiplier circuits is linear operation circuit); see column 9, line 18-34 (it is noted that the equation (3) is linear equation).

As to claims 5-6, using the hyperboloidal mirror optical structure as recited in the claims are well-known in the art, even admitted by applicant on page 18, lines 12-15. The optical system disclosed by this instant application is the same as the optical system disclosed in Japanese-Laid Open Publication No. 6-295333 as admitted by applicant.

As to claim 7, transforming the image into digital image data is taught by applicant admitted prior art, even the reference of Juday teaches an analog to digital converter (6).

As to claim 8, the image section (programmable remapper 10) of Juday having expansion PROM (e.g., 142) for storing the image information. This reads on the an image recording section as broad claimed language.

As to claim 9, Juday teaches that "the Address Lookup Table 34 (and the Factor Look-Up Table 36) may be segmented to allow several transforms to be loaded at once; see column 7, lines 51-60. Thus the CPU (104) must process in parallel so that several transform can be loaded at once.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Daniel et al (U.S. Patent No. 5,046,190) and Hekker et al (U.S. Patent No. 5,151,822) are cited to teach using hardware to transform the image inforamton.

Inquiries

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chanh Nguyen whose telephone number is (703) 308-6603.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Saras, can be reached on (703) 305-9720. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is 9703) 306-0377.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

CH
C.Nguyen

January 9, 2002

Chanh Nguyen
CHANH NGUYEN
PRIMARY EXAMINER